

U.S. Patent Appln. S.N. 10/820,738
REQUEST FOR RECONSIDERATION

PATENT

The 35 U.S.C. § 103(a) rejection of claims 9-19 over U.S. Patent No. 6,202,946 to Virtanen in view of U.S. Patent No. 5,762,756 to Scott et al. or U.S. Patent No. 5,582,681 to Back et al. is respectfully traversed. A feature of the claimed method of separating a coloring agent from recycled fibre material is a separate pretreatment step in which recycled fibre material is pre-kneaded prior to introduction of the pre-kneaded recycled fibre material together with liquid and gas or a gas mixture into a double-action impact mill.

The cited combination of references fails to raise a prima facie case of obviousness against the claimed method because one of ordinary skill in the art is given no disclosure or suggestion to combine the references as suggested by the Patent Office. Instead, one of ordinary skill in the art would consider Scott et al. and Back et al.'s low speed, pulping defibration technology to be alternatives to Virtanen's high speed, double-action impact mill defibration technology.

Virtanen is limited to a method of defibrating fiber-containing materials using a pin mill, and does not disclose or suggest a pre-kneading pretreatment of the fiber-containing material prior to its defibration process. Instead, Virtanen

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expressly teaches a defibrating pretreatment using aqueous vapor at about 130°C. and/or a bleaching pretreatment using an aqueous peroxide solution (Col. 2, lines 32-36).

Virtanen provides no suggestion or motivation to replace its high temperature steam pretreatment with a pre-kneading pretreatment. This is particularly true in view of its optional bleaching disclosure, which indicates a concern with maintaining or improving the brightness of the pulp. A known problem of conventional pulping methods for de-inking recycled fibrous materials is that pulp brightness is reduced after 15 minutes of pulping (Specification, paragraph No. 4). Accordingly, one of ordinary skill in the art would have no motivation from Virtanen et al. to pre-treat its fiber-containing material using a process known to reduce brightness.

The deficiencies of Virtanen are not remedied by the additional disclosure of Scott et al., which also fails to disclose pre-breaking or pre-kneading of fibers prior to a defibrating step. Instead, Scott et al. teaches a single pulper disperser (illustrated as 2 in Fig. 1) for simultaneous pulping and dispersing, with no additional ink dispersion step required to form deinked paper stock (Abstract; Col. 5, lines 13-20).

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The Scott et al. abstract clearly states: "After the simultaneous pulping and dispersing, no additional dispersion step is needed to form deinked paper stock." All of the remaining stages in Fig. 1 are non-fiber defibrators: purge screen 4, liquid cyclonic cleaner 6, coarse screen 8, fine screen 10, floatation device 12, cyclonic cleaners 14 and 16, and washer 18 (Col. 4, lines 13-63).

Scott et al. teaches that waste paper can either be completely or partially defibered by its pulping/dispersing station 2, and that non-defibered clumps of paper may be recycled either back into pulping/dispersing station 2 or to a separate defiberator located downstream (Col. 7, lines 57-60). However, this post-treatment step relates only to clumps of non-defibered paper rather than the entire material feed. In contrast, the claimed method pre-treats all material by pre-kneading it prior to defibrating it in the mill.

Contrary to the Official Action, Scott et al. does not teach that pre-kneading of secondary fibers serves the purpose of

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softening the bonding between the fibers and the ink particles and defibering the secondary particles.²

Back et al. also fails to disclose or suggest modifying Virtanen's defibration process by adding a separate pre-kneading pretreatment step. Instead, Back et al. is limited to a method for production of a sanitary paper product from newspapers containing coarse cellulosic fibers and printed with ink that contains oil. The method comprises (a) pulping the newspapers in water with agitation to produce a pulp slurry having a consistency of from 3-12% and a pH of below about 8.0; (b) adding to the slurry an enzyme selected from the group consisting of cellulase, hemicellulase and lipase, and maintaining the pulp slurry at a temperature above about 100°F. for at least 15 minutes; (c) maintaining at least about 2% of the oil in contact with the newspaper fibers throughout steps a and b; and using the enzyme treated pulp as a major source of fiber in the paper making process to produce a sanitary paper product (Abstract). Thus, Back et al. discloses a conventional,

²The Patent Office does not support its statement with any citation to such a disclosure in Scott et al. The Examiner is requested to cite to such supporting disclosure should he maintain Scott et al. discloses such a pre-kneading step.

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single stage pulping system, without a separate pre-kneading pretreatment step.

The Back et al. invention is directed to the retention of printing ink oils in combination with the coarse fibers found in newsprint to produce high quality, soft tissue products (Col. 3, lines 50-55). One of ordinary skill in the art is given no disclosure or suggestion to modify Virtanen's high speed, double action impact mill defibration method by adding a separate pre-kneading pretreatment step.

Col. 3, lines 42-49 of Back et al., cited by the Patent Office, does not disclose or suggest a pretreatment step:

More recently, high consistency pulping (13-18%) has been utilized for recycling old newspapers. This type of pulping technology utilizes the additional effect of rubbing/kneading between the fibers/papers at higher consistency to defiber and assist in separating inks from the fibers. Generally, the pulping temperature, time and chemical additions are the same as lower consistency pulping described above.

One of ordinary skill in the art would understand the above-quoted disclosure to state that certain parameters used in conventional high consistency pulping are the same as those used in low consistency pulping. Back et al. does not disclose or suggest a separate pre-kneading step prior to conventional kneading under high consistency conditions, and does not teach that pre-kneading

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of secondary fibers serves the purpose of softening the bonding between the fibers and the ink particles and defibering the secondary particles.

The improper combination of Virtanen in view of Scott et al. or Back et al. does not disclose or suggest the claimed method because the references taken in combination do not disclose or suggest a separate pre-kneading step prior to defibration.

During the interview Examiner Fortuna admitted the references do not teach the steps as claimed. Nevertheless, the Examiner argued the claimed method was obvious because (somehow) one of ordinary skill in the art would realize the benefits of the secondary references could be applied to Virtanen. This unsupported argument ignores the fact that neither Scott et al. or Back et al. discloses or suggests its pulping defibration step as a pre-defibration treatment step.

It is improper to use hindsight to combine references, In re Dembiczak, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999) (best defense against a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references). As demonstrated above, there is no teaching or motivation to combine Virtanen with

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either secondary reference because one of ordinary skill in the art would consider Scott et al. and Back et al.'s low speed, pulping defibration technology to be alternatives to Virtanen's high speed, double-action impact mill defibration technology. Moreover, their improper combination does not disclose the claimed method because none of the references disclose or suggest a separate pre-kneading pretreatment step prior to defibration.

Reconsideration and withdrawal of the obviousness rejection of claims 9-19 over Virtanen in view of Scott et al. or Back et al. are respectfully requested.

It is believed this application is in condition for allowance. Reconsideration and withdrawal of the rejection of claims 9-19, and issuance of a Notice of Allowance directed to claims 9-22, are earnestly requested. The Examiner is urged to telephone the undersigned should he believe any further action is required for allowance.

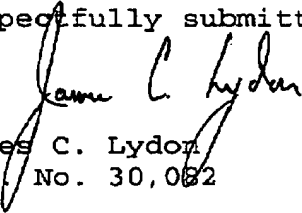
A Petition and fee for a three month Extension of Time are attached. It is not believed any additional fee is required for entry and consideration of this Request. Nevertheless, the

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Commissioner is authorized to charge our Deposit Account No. 50-
1258 in the amount of any such required fee.

Respectfully submitted,


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Enclosure:
Petition for Extension of Time